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#### Statement of Work

Title:

Technical Support to Stimulate and Promote Innovation in Science-based Approaches

for Estimating the Value of Water to the U.S. Economy

Contractor:

Industrial Economics, Inc.

Contract:

EP-W-10-002

Work Assignment: 2-37

Period of Performance:

Phase 2: November 19, 2011 to November 18, 2012

WA COR:

John Powers

OW/WPS (4101M) Ph. (202) 564-5776 Fax (202) 564-0500 powers.john@epa.gov

Alt. WA COR: Joel Corona

OW/WPS (4101M) Ph. (202) 564-0006 Fax (202) 564-0500 corona.joel@epa.gov

Contract Level COR:

Catherine Turner

OP (1805T)

Ph. (202) 566-0951 Fax (202) 566-3001

#### **BACKGROUND & PURPOSE**

There currently is no organized, science-based narrative on the economic value of water to the U.S. economy. A qualitative review of the literature provides some insights on the importance of water to certain sectors of the economy, such as tourism, farming and food production, fishing, manufacturing, infrastructure, housing and energy, but the information tends to be incomplete or lacking in strategic insight.

As a consequence, EPA and others are unable to systematically and comprehensively analyze the value of water to the U.S. economy, resulting in potentially inefficient resource protection and management decisions. This project is intended to stimulate and promote innovation to fill this information gap.

Furthermore, when combined with EPA research on the value of water in the U.S. from *nonmarket* consumption (e.g., nonuse values, recreation, etc.), this project will serve as a catalyst for integrating market and nonmarket "pricing" information that is critical to support decision-making at multiple scales (e.g., EPA, state, regional, watershed, local).

The purpose of this project is, therefore, to stimulate and promote awareness and innovations resulting in the enhanced capacity of analysts and decision-makers to evaluate the economic value of water and the contribution it makes to the U.S. economy over time. Key questions to address include the following:

- Given projected trends in population growth and composition, trends toward urbanization, shortages in critical infrastructure investment, global warming, and other strategic drivers of change, how does the availability of clean water affect patterns of economic and regional development in the U.S.?
- How does clean water create competitive advantages for the U.S. in the 21<sup>st</sup> Century global economy? In what sectors of the U.S. economy are these competitive advantages most strategically significant to the nation as a whole? What are the implications on regional economic development?
- How robust are these projections to strategic choices made by other nations, and how could these choices affect relative (comparative) advantages between the U.S. and its trading partners?
- What strategic choices must the U.S. consider to maximize the sustainable economic value generated by its water supplies in the 21<sup>st</sup> Century?

The project will be managed to integrate, coordinate, and share knowledge developed in two areas. First, the contractor will engage stakeholders and external experts to begin a dialogue on the value of clean water to the U.S. economy through development of a comprehensive, high-level and forward-looking narrative that informs current and future decision-makers, and engages the public, policy-makers, civic leaders, business leaders, water managers, and others in appreciating the contribution water makes to the nation's economic well-being. Second, EPA, with the support of the contractor, will conduct a technical analysis of the current economic and natural resource statistics, models, and methods available for valuing the contribution of water to the market economy, and identify innovations required to enhance its capacity to analyze the impacts of its regulations and policies on the U.S. economy.

The general workflow of the project is as follows:

### Part I: Background Report

• <u>Purpose</u>: To provide a consistent set of background information that (1) provides a baseline understanding of the economic and natural resource statistics, methods and models available describing, and for conducting analysis of, the value of water to the U.S. economy, and (2) informs selection of strategic topics and experts for further inquiry in Part II of the project.

#### Part II: Expert Papers

• <u>Purpose</u>: To engage and provide technical assistance to experts on specific strategic topics identified in Part I to gain greater insight on current values of water to the U.S. economy, current analytic capabilities, and innovations required to enhance technical analysis capabilities.

### Part III: Workshop

<u>Purpose</u>: To present the findings from Parts I and II to a group of diverse stakeholders, engage
the experts and stakeholders in a discussion about the findings and implications, and identify
innovations required to enhance technical analysis capabilities.

### Part IV: Synthesis Reports

<u>Purpose</u>: To synthesize the findings of Parts I-IV into documents for non-technical and technical audiences. The synthesis for non-technical audiences shall focus on the findings on the value of water to the U.S. economy, whereas the synthesis for technical audiences shall focus on analytic issues, including innovations required to enhance EPA's capacity to integrate market and nonmarket "pricing" information critical to support decision-making at multiple scales (e.g., EPA, state, regional, watershed, local). One or both synthesis reports may be submitted for formal peer review.

Note that the duration of this project will extend into a new contract period of performance beginning November 19, 2011. The initial work assignment (Phase 1 of the project) will focus on Parts I and II, whereas the follow-up work assignment (Phase 2) will continue this work through completion of Part IV. A General Schedule of Deliverables is included below showing the anticipated work flow between the Phase 1 and Phase 2 work assignments. The products developed under Phase 1 are essential to completion of the work products developed under Phase 2 in the follow-up work assignment.

Note that EPA may consult with its Science Advisor Board (SAB) on this project. A task is included in this work assignment for the contractor to provide technical assistance to the WA COR if required, and a column is included in the General Schedule of Deliverables describing the potential scope and timing of consultation.

Contractor personnel shall at all times identify themselves as contractor employees and shall not present themselves as EPA employees. Furthermore, they shall not represent the views of the U.S. Government, EPA, or its employees. In addition, the contractor shall not engage in inherently governmental activities, including but not limited to actual determination of EPA policy and preparation of documents on EPA letterhead.

# **TASKS & DELIVERABLES**

The WA COR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the WA COR's comments.

### Phase 1: Task 1 - Prepare Workplan and QAPP, and Administer the Work Assignment

The contractor shall prepare a Workplan for Phase 1 and Phase 2 within 15 calendar days of receipt of a work assignment signed by the Contracting Officer. The workplan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a staffing plan, and a detailed cost estimate by task. The WA COR, Contract Level COR and the CO will review the workplan. However, only the CO can approve/disapprove the workplan. The contractor shall prepare a revised workplan incorporating the CO's comments, if required.

The contractor shall prepare a written Quality Assurance Project Plan (QAPP) and submit QA Reports with monthly progress reports and with the Final Report.

The contractor shall also identify how it will administer the work assignment.

#### Deliverables:

- 1A. Workplan due within 15 calendar days of receipt of the work assignment.
- 1B. Revised workplan due within 7 calendar days of receipt of comments from the Contracting Officer, if required.
- 1C. QAPP due within 15 calendar days of receipt of the work assignment.
- 1D. Revised QAPP due within 7 calendar days of receipt of comments from the **WA COR**, if required.
- 1E. Monthly QA Reports due with monthly progress reports and with the Final Report.

#### Phase 1: Task 2 – Begin Background Report (Contract SOW Ref. Pg. 5-8, Element 1)

The contractor shall write a background report that provides a consistent set of background information that (1) provides a baseline understanding of the economic and natural resource statistics, methods and models available describing, and for conducting analysis of, the value of water to the U.S. economy, and (2) informs selection of strategic topics and experts for further inquiry in Phase 2 of the project. To do this, the contractor shall review relevant literature, consult with experts, and analyze economic and natural resource statistics.

The report shall be written in four steps — Outline, Draft 1, Draft 2, and Final. The Outline and Draft 1 deliverables will be due under this work assignment, with specific due dates determined through technical direction. The Draft 2 and Final deliverables are addressed in Phase 2: Task 5 — Complete Background Report, described below.

# <u>Deliverables</u>:

- 2A. Background Report Outline due date determined by technical direction, but expected in October 2011, as indicated in the General Schedule of Deliverables.
- 2B. Background Report Draft 1 due date determined by technical direction, but expected in November 2011, as indicated in the General Schedule of Deliverables.

### Phase 1: Task 3 – Begin Expert Papers (Contract SOW Ref. Pg. 5-8, Element 1)

The contractor shall write approximately ten (10) expert-level papers on specific strategic topics identified in Phase 1: Task 2 to gain greater insight on current values of water to the U.S. economy, current analytic capabilities, and innovations required to enhance critical technical analysis capabilities. The process for identifying the topics and experts shall be based on an objective and scientifically-based assessment of the deliverables and knowledge gained in Phase 1: Task 2. Specific sub-tasks for this task include (1) developing a Draft Topics List describing key focal areas for expert research and analysis; and (2) developing Draft Charge Questions to address in expert-level papers (may be general or specific to a topic). Additional requirements, including deliverable due dates, will be issued through technical direction.

## Deliverables:

- 2A. Draft Topics List due date determined by technical direction, but expected in October 2011, as indicated in the General Schedule of Deliverables.
- 2B. Draft Charge Questions due date determined by technical direction, but expected in November 2011, as indicated in the General Schedule of Deliverables.

# Phase 1: Task 4 – Support for SAB Consultation (Contract SOW Ref. Pg. 5-8, Element 1)

The contractor shall provide the WA COR with technical support for consulting with EPA's Science Advisory Board on this project. Specific activities may include developing presentation materials and charge questions, participating in technical discussions, and taking notes. Travel (day-trip; no overnight) to Washington, DC may be required for one or two individuals. Specific deliverables and due dates will be determined through technical direction.

### Phase 2: Task 5 - Complete Background Report (Contract SOW Ref. Pg. 5-8, Element 1)

The contractor shall complete the background report initiated in Phase 1: Task 2. Specific deliverables under this phase of the work assignment include Draft 2 and Final report, with specific due dates to be determined through technical direction. The Background Report may be submitted for peer review. As described in the General Schedule of Deliverables (below), it is expected that Draft 2 will be due in January 2012, and that the Final report will be due in May 2012.

### Deliverables:

- 5A. Background Report Draft 2 due date determined by technical direction, but expected in January 2012, as indicated in the General Schedule of Deliverables
- 5B. Background Report Final due date determined by technical direction, but expected in May 2012, as indicated in the General Schedule of Deliverables.

# Phase 2: Task 6 - Complete Expert Papers (Contract SOW Ref. Pg. 5-8, Element 1)

The contractor shall complete the expert papers initiated in Phase 1: Task 3 by researching, writing, and editing draft and final expert papers. The expert papers may be submitted for peer review. Specific deliverable due dates will also be determined through technical direction, but as described in the General Schedule of Deliverables, it is expected that the Draft Expert Papers will be due in March 2012, and Final Expert papers will be due in May 2012.

#### Deliverables:

- 6A. Draft Expert Papers due date determined by technical direction, but expected in March 2012, as indicated in the General Schedule of Deliverables.
- 6B. Final Expert Papers due date determined by technical direction, but expected in May 2012, as indicated in the General Schedule of Deliverables.

# Phase 2: Task 7 - Workshop (Contract SOW Ref. Pg. 5-8, Element 1)

The contractor shall organize a workshop for approximately 100-250 attendees to engage experts and a diverse group of stakeholders in a discussion about the findings and implications of the Background Report and Expert Papers, and to identify innovations required to enhance technical analysis capabilities. The workshop shall be organized to provide a comprehensive, high-level and forward-looking narrative that informs current and future decision-makers, and engages the public, policy-makers, civic leaders, business leaders, water managers, and others in appreciating the contribution water makes to the nation's economic well-being.

The contractor shall contribute to the planning of the workshop and agenda, develop PowerPoint presentations, give presentations, participate in discussions, take notes, and write draft and final workshop summaries. The contractor may be required to make space arrangements. Travel (3 days, 2 nights for 1-2 individuals) to Washington, DC or another location (TBD) for the workshop will be required.

As described in the General Schedule of Deliverables, it is expected that the Workshop will take place in June-August 2012 with planning activities taking place in January-May 2012. Draft and final workshop summaries are expected to be due no later than September and October 2012, respectively. Specific deliverables and due dates will be determined through technical direction.

# Phase 2: Task 8 – Synthesis Reports (Contract SOW Ref. Pg. 5-8, Element 1)

The contractor shall synthesize the findings of Tasks 2-7 into two documents for non-technical and technical audiences. The synthesis for non-technical audiences shall focus on the findings on the value of water to the U.S. economy, whereas the synthesis for technical audiences shall focus on analytic

issues, including innovations required to enhance EPA's capacity to integrate market and nonmarket "pricing" information critical to support decision-making at multiple scales (e.g., EPA, state, regional, watershed, local). One or both synthesis reports may be submitted for formal peer review.

The process for writing the synthesis reports shall be based on an objective and scientifically-based assessment of the deliverables produced under Tasks 2-7. Deliverables will include draft and final outlines, and draft and final reports for both syntheses. As described in the General Schedule of Deliverables (below), it is expected that the Draft Outlines will be due in May-June 2012, Final Outlines will be due in August 2012, Draft Reports will be due in September 2012, and Final Reports will be due in October 2012. Specific deliverables and due dates will be determined through technical direction.

#### Deliverables:

- 8A. Draft Outlines for Synthesis Reports due date determined by technical direction, but expected in May-June 2012, as indicated in the General Schedule of Deliverables.
- 8B. Final Outlines for Synthesis Reports due date determined by technical direction, but expected in August 2012, as indicated in the General Schedule of Deliverables.
- 8C. Draft Synthesis Reports due date determined by technical direction, but expected in September 2012, as indicated in the General Schedule of Deliverables.
- 8D. Draft Synthesis Reports due date determined by technical direction, but expected in September 2012, as indicated in the General Schedule of Deliverables.

### Phase 2: Task 9 - Support for SAB Consultation (Contract SOW Ref. Pg. 5-8, Element 1)

The contractor shall provide the WA COR with technical support for consulting with EPA's Science Advisory Board on this project. Specific activities may include developing presentation materials and charge questions, participating in technical discussions, and taking notes. Travel (day-trip; no overnight) to Washington, DC may be required for one or two individuals. Specific deliverables and due dates will be determined through technical direction.

**General Schedule of Deliverables** 

	Part I Background Report	Part II Expert Papers	Part III Workshop	Part IV Synthesis Reports	Potential SAB Consultation
PROJECT PHAS	GE 1 – this work assignment (thr	ough Nov 18, 2011)		,	
Sep '11					
Oct '11	Outline	Draft topics list			Provide project overview & seek advice on engaging
Nov '11	Draft 1	Draft charge questions	experts		
PROJECT PHAS	SE 2 – follow-on work assignmer	t t (beginning Nov 19, 2011 throug	th Nov 18, 2012)		
Dec '11		Final topics list Final charge questions Define scope of expert papers			
Jan '12	Draft 2	Provide RA support for		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Share & discuss Draft 2
Feb '12	i	experts			Background Report
Mar '12		Draft Papers	Workshop planning		
Apr '12					
May '12	Final	Final			·····  Share & discuss Final Exper
Jun '12		į	₽>	Draft Outlines	Papers
Jul '12			···> Workshop		
Aug '12				Final Outlines	
Sep '12			Draft workshop summary due	Draft Reports	
Oct '12	. <del>_</del>		Final workshop summary due	Final Reports	Present & discuss Final
Nov '12					Worksnop Summary and Fin Synthesis Reports

#### Mayor Deisverables:

- Final Background Report (Phase I) = May 12
- Final Expert Papers (Phase II) May '12
- Workshop (Phase III) Joh Aug 12
- Final Workshop Sterimary (Phase III) Ort 12
   Final Synthesis Reports (Phase IV) Oct 12
- Potential consultations with SAB | Sep-Nov 121, Jan-Feb 127, May-Jun 12 | Oct-Nov 12

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United States Environmental Pro Washington, DC											Work Assignment Number 2 - 3 ?			
		A		V	/ork A	ssignm	ent			Other Amendment Number:				
Cor	ntract Number	,		Contract Pe	riod 11.	/03/2010	То	09/10/	2013	Title of Work Assignment/SF Site Name				
ΕР	-W-11-003 Base Option Period Number 2									Env. R	eg. &	Tech. Cha	inge	
Contractor Specify Section and pa									ragraph of Co	ntract SOW				
ΑE	T ASSOC	IATES INC					Pg.	1-7 (CI	), Pg.	1 8 (3)			1_1	
Pu	pose:	Work Assi	griment			Work Assig	nment (	Close Out		Period of	Performan	ce		
l	Work Assignment Amendment Incremental Funding									-8				
X   Work Plan Approval   From   09/11/2012 To   11/02/2								1/02/2012						
Th 20	Comments:  The purpose of this action to Work Assignment 2-37 is to approve the contractor's budget as imate dated September 20, 2012 for 109.23 hours level of effort, $(b)(4)$ in estimated costs, $(b)(4)$ in fixed fee, with a calling of \$13,113.96.													
	Supe	fund			Acc	ounting and	Appro	priations Data	1			X	Non-Superfund	
┢╾		_		Note: To report	additional a	coounting and a	appropr	iztions date use	EPA Form 19	00-69A.			<del>-</del>	
Q	SFO Vax 2)	DVEW	<b>.</b>								/CL-)	Site/Project	01 0 (0-do	
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropris Code (Ma		l Org/Code Max 7)	Program El (Max 9		Object Class (Max 4)	Amount (II	orars)	(Cents)	(Max 8)	Cost Org/Code (Max 7)	
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_					Aut	thorized Wor	k Assi	gnment Ceilir	ıg					
	ntract Period  7.0.3.7.2.0.13	) То 09/10		t/Fee:					LOE.					
_	s Action:	از دهن ما د	1/20-3											
	3877924000550000 50													
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Tot	al.				Wr	ork Plan / Co	st Esti	mate Approva	als					
Çei	ntractor WP Dat	ed: ŋg/ɔ̞ɲ	/2012	C	7293	13,113.9				- 109				
Cui	nulative Approv	101 9 8 0.00	7 7. 07 4. 5.	С		313,113.	11 0			100-109				
1000	r's Applicant on the	Manager Name	Cuntinia	Morgan		J	e		Dro					
****	iv Wasidilliseir i	nanager Hame	Cyntina	. Molyali						Branch/Mail Code:  Phone Number 202-566-2296				
		/Signa	tura!				(Dain			FAX Number:				
(Signeture) (Date) Project Officer Name   Cathy   Turbor								nch/Mail Co	ode:					
											566-0951	<del></del>		
<del></del>								es acas as	7.32.	360.937				
(Signeture) (Date) Other Agency Official Name								Number:	. عد					
							nch/Mail Co							
								one Number	**					
A									CNumber: nch/Mail Co	ide:				
"	عم <u>ي</u>	47	1/				10	116.11-	<u> </u>	ne Number	ero_100	-564-1987		
		(Signe		1			1000	14/10	<u> </u>	Number:	· toili			
VVA	ork Assignment	Form. (WebForms	- \				ישניני		1 170	rannianat.				
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EPA		Work Assignment Number 2-37							
	Work A	ssignm	ent		Other Amendment Number:				
Contract Number	Contract Period 11	/19/2009	To 09/13/	2014	Title of Work Assign	ment/SF Site Nar	ne		
EP-W 10-002	Base	Option Peri	od Number 2		Value of Wat	er to U.S	. Econ.		
Contractor	•		Specify Section and pa	ragraph of Con	tract SOW				
INDUSTRIAL ECONOMICS, IN	CORPORATED		Pgs. 5-8, E.	lements	1				
Purpose: Work Assignment		Work Assign	nment Close-Out		Period of Performan	св	$\sim \sim$		
Work Assignment Ame	endment	Incrementa:	Funding		ľ		<i>7</i> /		
X Work Plan Approval	-		From 11/19/	2011 😘 🏹	119/2012				
Comments: The purpose of this action to estimate dated October 24, 201 a defling of \$242,044.38 and 2	2 For Option Year	2 with an	estimated cost	of (h)(4)	fized fo	ork plan budd se of <mark>(h)(4)</mark>	et for		
Superfura	Acc	counting and	Appropriations Data	9		X	Non-Superfund		
SFO (Max 2)	Note: To report additional a	accounting and a	appropriations date use	EPA Form 1900	9-69A				
p DCN Budget/FY Apprep ☐ (Max 6) (Max 4) Code (I		Program Eli (Max 9		Amount (Do	llars) (Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)		
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2					-				
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5		Ī		·	•				
	Αυ	thorized Worl	k Assignment Ceilir	ng					
4	ost/Fe6:			LOE:					
10/19/2009 To 09/19/2014 This Action:							-		
THE FIGURE									
Tatali							-		
Total:		ork Plan / Cos	st Estimate Approva	ale .					
Contractor WP Dated: 10/24/2012		242,044.			2 247				
Cumulative Approved:		\$242,044.			LOE: 2,247				
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Work Assignment Manager Name John F	owers				Branch/Mail Code:				
<del></del>			(Date)		Phone Number 202-564-5776				
(Signature) Project Officer Name   Cathy Turner	<del>  </del>	FAX Number: 202 - 364 - 0500							
Trojest Officer than te Calliny Turning	-	ch/Mail Code:							
		e Number: 202-	566-0951						
(Signature)	<del></del>	Number:							
Other Agency Official Name	Bran	ch/Mail Code:							
		e Number:							
(Signature)		<b>t</b> ,	(Date)		Number:				
Contracting Official Name Jam 2009	The for Mar	mon			ch/Mail Code:				
			11/8/12		e Number: 202-	-564- <del>4781</del> (	187		
(Signatore)			(Datě) I	FAX	Number:				
Work Assignment Form (Webl Grins v1.0)									